REMARKS:

1) Claims 1 and 26 have been amended for clarifying and emphasizing certain significant features of the invention. The amendment of claim 1 is supported by the original disclosure of Figs. 1 and 5 and the written description at page 6, line 11 to page 7, line 13; page 13, lines 12 to 22; and page 19, line 19 to page 20, line 8. The amendment of claim 26 is supported in the original written description at page 20, line 9 to page 22, line 18. The amendments do not introduce any new matter. Entry and consideration of the claim amendments are respectfully requested.

2) New claims 32 to 41 have been added. Claims 31 to 39 depend from claim 1, claim 40 depends from claim 26, and claim 41 is a new independent claim. The new claims are supported by the original disclosure as shown in the following table, and do not introduce any new matter. Entry and consideration of the new claims are respectfully requested.

New Claims	32	33	34	35	36	37
Original Support	Fig.1; pg. 5, ln.5-15	Fig.1	Fig.5	Fig. 1; pg.6,, ln.3-6; pg. 16, ln.24- pg. 17, ln.3	Fig.1; pg.15, ln.17-20;	Fig.1

New Claims	38	39	40	41
Original Support	Fig.1; pg.15, ln.17-20; pg.16, ln.24- pg.17, ln.3	Fig.6; pg.4, ln.23- pg.5, ln.4; pg.8, ln.19-23; pg.12, ln.5-13; pg.12, ln.26- pg. 13, ln.9; pg.17, ln.8-14; pg.20, ln.9- pg. 22, ln.18	Fig.6; pg.4, ln.23- pg.5, ln.4; pg.8, ln.19-23; pg.12, ln.5-13; pg.12, ln.26- pg. 13, ln.9; pg.17, ln.8-14; pg.20, ln.9- pg. 22, ln.18	Cl.1,2,3,6

3) Before addressing the particular prior art rejections, and comparing claimed features of the invention to the disclosures of the prior art, the invention will first be discussed in general terms to provide a background.

The present invention is directed to an apparatus and a method for determining an unbalance of a rotational body that is rotatably supported on a mounting plate of the apparatus.

The main object of the present invention is to arrange and support the mounting plate in such a manner so that all of the forces induced by the unbalance of the rotational body are introduced into the mounting plate, yet the static unbalance component is resolved and detected separately from the dynamic unbalance component caused by rotational unbalance moments. Particularly, the mounting plate is arranged and supported so that the static unbalance of the rotational body will cause a translational vibration of the mounting plate back-and-forth

along the plane of the plate, while the rotational unbalance moment of the rotational body causes the mounting plate to pivotally vibrate about a pivot axis. In this regard, see the original written description at page 3, lines 11 to 20; page 4, line 23 to page 5, line 19; page 6, lines 11 to 18; page 8, lines 16 to 25; and page 12, line 1 to page 13, line 11 and especially page 12, line 26 to page 13, line 6.

The isolation of the static unbalance from the rotational moment unbalance is especially achieved by supporting the mounting plate so that the pivot axis lies in the plane of the mounting plate. A first vibration sensor is arranged with its sensitive axis lying in the plate plane so as to sense only the translational vibration without being influenced by the pivoting vibration, and a second sensor is arranged with its sensitive axis perpendicular to the plate plane and offset from the pivot axis so that it is sensitive to only the pivotal vibrations without being influenced by the translational vibrations. Thereby, the first sensor senses only the static unbalance and the second sensor senses only the dynamic unbalance resulting from the rotational unbalance moment of the rotational body being tested. In this regard, see the above cited text portions of the original written description.

In order to achieve the above described support of the mounting plate so that it undergoes translational vibration due to the static unbalance and pivotal vibration due to the rotational unbalance moment of the rotational body, the inventive apparatus further includes plural pairs of webs that are arranged on the plate plane and respectively connect the mounting plate

to an outer frame so as to support the mounting plate. These plural pairs of webs are configured and arranged so as to allow the mounting plate to vibrate translationally in the plane of the plate, and to vibrate pivotally about the pivot axis, as described above. In this regard, see the original written description especially at page 12, lines 13 to 15; page 13, line 12 to page 15, line 14.

The prior art neither discloses nor would have suggested an arrangement of a mounting plate and supporting webs as presently claimed, and would not have achieved or suggested the isolation or separation of the two distinct unbalance components as a translational vibration and a pivotal vibration, that is achieved according to the present invention. The claimed features of the invention will be discussed in comparison to the prior art below. Note that all of the features generally discussed above are not necessarily limitations of each independent claim, but rather each claim must be evaluated in connection with the features and limitations expressly recited therein in comparison to the prior art.

4) Referring to section 3 on pages 2 to 7 of the Office Action, the rejection of claims 1 to 5 and 7 to 26 (and apparently also applying to claims 27 to 31) as obvious over U. S. Patent 4,930,348 (Bandhopadhyay et al.) is respectfully traversed.

5) Bandhopadhyay et al. disclose a vertical balancing machine with a rotational spindle that defines a vertically oriented rotation axis.

The spindle is rotatably arranged in a spindle cartridge (30) which in turn is supported in a suspension cartridge (26), which in turn is bolted to and supported on a mounting table (12). The suspension cartridge (26) includes an upper suspension plate (36) and a lower suspension plate (38) that are rigidly connected to each other by a rigid cylindrical sleeve or tube (40). Both the upper suspension plate and the lower suspension plate are each provided with arcuate slots (46, 46') that leave narrow webs (48, 48') supporting a central portion or inner ring (50, 50') of the respective plate relative to an outer portion (52, 52') of the respective plate. Particularly, there are two diametrically opposite webs (48) supporting the inner portion of the upper suspension plate, and two diametrically opposite webs (48') supporting the inner portion of the lower suspension plate, whereby all four of these webs (48, 48') lie on a vertical plane extending along the rotation axis.

The disclosed apparatus further includes two vibration sensors or transducers (62, 62') that are connected to the outer portion and functionally coupled to the inner portion of the upper suspension plate and the lower suspension plate, respectively. The transducers are arranged at a location offset halfway between, or 90° relative to, the two webs of the respective associated suspension plate. The sensitive measuring axis of each vibration sensor is oriented perpendicular to the vertical axial plane on which all of the webs (48, 48') lie.

Particularly, <u>the lower suspension plate is functionally the same as the upper suspension plate</u>, and <u>each transducer and its mounting is respectively mechanically and functionally the same for the lower plate and for the upper plate</u> (Col. 3, lines 17 to 26).

<u>The four webs (48, 48') are all aligned so that they lie on the same vertical diametrical plane extending along the vertical rotation axis, and are configured so that they provide a strong support in the axial direction while acting as a spring in the direction perpendicular to the vertical plane</u> (col. 4, lines 35 to 38). The <u>two vibration transducers are arranged with their sensitive measuring axes perpendicular to this plane</u>, so that they can detect the vibrations of the respective inner portion of the upper and lower suspension plates as permitted by the supporting webs (col. 3, lines 24 to 26; col. 4, lines 35 to 38).

The disclosed machine is said to be useful for both dynamic and static unbalance measurements (col. 2, lines 26 to 27). With the two vibration transducers (62, 62') arranged with their respective sensitive measuring axis lying in the plane of the respective suspension plate and oriented perpendicular to the vertical plane of all of the webs (48, 48'), <u>each vibration transducer is individually only able to sense the translational vibration of the respective associated inner portion of the suspension plate</u>. This is especially true also due to the coupling of the vibration transducer through a steel ball or convex washer (64, 64') which has the effect of isolating from the vibration transducer any pivoting or out-of-plane vibrations of the respective suspension plate.

The entire reference makes **no** mention of sensing or determining **pivotal** vibrations. The disclosed apparatus does not include any sensor that is arranged to directly pick up pivotal vibrations of one of the suspension plates. With the disclosed support of the rotational spindle by the upper suspension plate (36) through the two webs (48), and the lower suspension plate (38) through the two webs (48'), any pivotal vibration of the rotational spindle would **not** be about a pivot axis lying in the plane of either one of the suspension plates, but rather would be a pivoting about a pivot axis that lies between the upper and lower suspension plates, for example halfway between the upper and lower suspension plates assuming the same dimensioning and strength of the upper webs (48) and the lower webs (48'). Such a pivoting would be represented by a translational vibration of the upper suspension plate toward the right at the same time as a translational vibration of the lower plate toward the left, and vice versa. Since each vibration transducer can only sense the translational vibrations of the respective associated suspension plate, and since the two vibration transducers are expressly said to be functionally the same, the only way to determine a pivotal vibration in the apparatus of the reference would be to calculate such a pivotal vibration from the differences between the two vibration signals provided by the two vibration transducers. It is expressly such a "mixed" pick-up of the static unbalance and dynamic rotational moment unbalance components that is to be **avoided** by the present invention.

The disclosed features of the apparatus according to Bandhopadhyay et al. would not have suggested the presently

claimed inventive features, for the r asons that will be discussed next.

6) The Examiner has asserted that the inner portion (50) and the outer portion (52) interconnected by the webs (48) of the upper suspension plate (36) of the reference, are analogous to the mounting plate, the outer frame, and the webs of the present inventive arrangement. The Examiner has further analogized the spindle cartridge supported by the inner portion of the upper suspension plate of the reference to the mounting fixture of the present inventive arrangement, and the vibration transducer (62) of the reference to the present first vibration transducer adapted to detect translational vibrations in the present inventive arrangement. While certain similarities regarding such general components are recognized and acknowledged, that is where the reasonable analogy ends, and the reference neither discloses, nor would have suggested the further particular features, combination, and interaction of the components as defined in the present claims.

7) Present amended independent claim 1 is directed to an apparatus for determining an unbalance of a rotational body.

The present apparatus includes a mounting plate extending along and defining a plate plane, an outer frame at least partially outwardly around the mounting plate, and plural **pairs** of webs **on the plate plane**, with the webs respectively connecting the mounting plate to the outer frame in a symmetrical arrangement of the webs relative to the rotation axis.

In comparison to present claim 1, Bandhopadhyay et al. disclose only a single pair of webs (48) supporting the inner portion (50) of the upper suspension plates.

While Bandhopadhyay et al. provide a second pair of webs (48') supporting the inner portion (50') of the lower suspension plate (38), that second pair of webs (48') does not lie on the same plate plane of the upper suspension plate (36) but rather lies on the plate plane of the lower suspension plate (38). The plane on which all of the webs (48, 48') lie, is a vertical plane extending along the vertical rotation axis.

The reference would not have suggested providing further pairs of webs supporting the inner portion of the upper suspension plate on the plane of the upper plate. The reference does not suggest any reason, purpose, benefit or advantage that could be achieved by providing such additional pairs of webs to support the upper suspension plate.

More importantly, simply duplicating the existing pair of webs (48) by arranging additional pairs of such webs (48) on the same plane at different circumferential locations, would have been directly contrary to the intended operation of the disclosed device. Namely, such additional radially extending webs at any other location out of the vertical plane of the existing pair of webs (48) would have provided a bracing component that would have braced the inner plate portion against the intended translational vibration thereof in a direction perpendicular to the vertical plane of the two existing webs. In other words, such an arrangement with additional pairs of radial webs at additional circumferential locations would no longer have acted as a spring

in a direction transverse to the vertical plane of the existing pair of webs (48) (see col. 4, lines 35 to 38).

For these reasons, a person of ordinary skill in the art would not have been motivated or enabled to provide additional pairs of webs on the plane of the upper suspension plate, and therefore the present invention of claim 1 would not have been obvious.

The present application has enabled and suggested the arrangement of additional pairs of webs on the same plate plane, whereby the different pairs of webs have different configurations, different strong and weak bending axes, and different purposes, relative to each other (for example, see the present written description at page 13, line 12 to page 15, line 14). Thus, <u>the provision of additional pairs of webs according to the invention is not a "mere duplication" of the first pair of webs as disclosed by Bandhopadhyay et al.</u>, because <u>the additional webs must necessarily have different characteristics and serve different functions in order to result in a functional device</u>.

8) The claims depending from claim 1 recite additional features that further distinguish the invention over the prior art, for example as follows.

9) Claim 3 recites that the mounting plate undergoes pivotal vibration about a pivot axis, and the apparatus further comprises a second vibration transducer coupled to the outer frame and to

the mounting plate so as to detect the pivotal vibration of the mounting plate.

As discussed above, the reference discloses a first vibration transducer coupled to the upper suspension plate and a second vibration transducer coupled to the lower suspension plate. There is no suggestion to provide a second transducer coupled to the same suspension plate, as presently claimed.

The Examiner's argument about the coupling of one suspension plate to the other through the rigid tube (40) is noted. But according to Bandhopadhyay et al., the two transducers are expressly arranged mechanically the same and functionally the same as each other, but with respect to the two distinct suspension plates (col. 3, lines 17 to 24). Therefore, there would have been no suggestion to provide a first transducer for sensing the translational vibrations, while providing a second transducer for sensing the pivotal vibrations, because according to the reference, both sensors are necessarily functionally the same.

Thus, the two sensors of the present invention **are not** merely a duplication of each other, while the two sensors of the reference are merely a duplication of each other.

10) Claim 4 recites that the first vibration transducer has its measuring axis oriented perpendicular to the pivot axis and substantially perpendicular to the rotation axis, while the second transducer has its measuring axis oriented substantially perpendicular to the plate plane at a location offset from the pivot axis.

Neither of the two transducers according to the reference are arranged as presently claimed. As discussed above, any pivot axis that might exist in the apparatus according to the reference would be positioned along the rotation axis at a location between the upper suspension plate and the lower suspension plate, as a matter of simple mechanics. Neither of the two vibration transducers (62, 62'), are oriented with a measuring axis thereof perpendicular to such a pivot axis.

As further admitted by the Examiner, neither of the two disclosed vibration transducers has a measuring axis oriented substantially <u>perpendicular</u> to the plate plane. Directly to the contrary, both transducers in the disclosed arrangement are necessarily oriented with their measuring axes **<u>lying in</u>** the respective plate plane of the plate to which they are connected.

In this regard, the Examiner has asserted "*The location of a transducer requires minimum skill in the art and can be determined through experimental tests*". The Examiner's assertion is respectfully traversed in relation to the present very different orientations of the transducer axes. There is no suggestion by the reference whatsoever to provide a transducer with its measuring axis oriented perpendicular to the plate plane. To the contrary, all of the teachings of the reference expressly require the transducer to be arranged with its measuring axis lying in the plate plane in order to be able to measure the translational vibrations, as discussed above. A person of ordinary skill in the art would have found no motivation or purpose of orienting a vibration transducer in the

manner as presently claimed, based on the disclosures of the reference.

The Examiner's argument regarding the disclosure of the reference that each transducer is located 90° from the webs, and the second transducer is mounted the same as the first transducer, so that "*Therefore, the transducer 62' is perpendicular to the plate 36*" is not logically understood. The disclosure of the reference that the transducers are located as shown in Figs. 4 and 5, circumferentially between the two webs of the associated plate, absolutely does **not** suggest that the measuring axis of one of the sensors is oriented 90° relative to the plane of the plate. To the contrary, each of the sensors is oriented with the measuring axis lying in the plane of the plate as is clear from the written disclosure as well as Figs. 2, 4 and 5.

11) Present claim 5 is directed to the embodiment of present Fig. 5, in which a first vibration transducer has its measuring axis coincident with the pivot axis while the second transducer has its measuring axis substantially perpendicular to the plate plane. The reference has absolutely no disclosures or suggestions relevant to such an embodiment whatsoever. The Examiner's statement of benefits that can be achieved by the presently disclosed and claimed arrangement is a mere post hoc rationalization based on hindsight reasoning provided by the present application disclosure, but is not supported or suggested by the prior art reference.

12) Claim 7 recites that each vibration transducer arrangement includes a vibration transducer and an elastically flexibly bendable coupling rod. Directly contrary to the use of such a flexibly bendable coupling rod, Bandhopadhyay et al. expressly require a rigid coupling using a screw (58), ball (64), and lock nut (60) for coupling the transducer to the associated suspension plate. The Examiner is absolutely correct that the reference does not disclose or suggest a flexibly bendable coupling rod. The Examiner's assertion that it is well known in the art to use a coupling rod is respectfully traversed in the present context. The prior art would not have suggested or motivated the use of a flexibly bendable coupling rod as presently claimed, because it is directly contrary to the teachings of the reference to use a rigid coupling, and it would not have served any purpose in the reference.

13) Regarding present claim 9, Bandhopadhyay et al. do not disclose a transducer oriented as presently claimed so as to detect pivotable vibration of a mounting plate in the first place, so the reference certainly would not have suggested providing two vibration transducers on opposite sides of a pivot axis.

14) Present claim 10 recites that the pivot axis always lies in the plate plane of the mounting plate.

As described in the present specification and discussed above, this is important for isolating or separating the two different unbalance components from each other (see the above discussion).

Bandhopadhyay et al. do not disclose anything about pivotal vibrations around a pivot axis. Based on the mechanical structure disclosed by the reference, it would not have been possible for the arrangement to undergo pivotal vibrations about a pivot axis lying in the plane of either one of the two suspension plates. Instead, as discussed above, by simple mechanics it is apparent that any pivotal vibration (if at all) could only take place about a pivot axis lying between the two plates, while the two plates undergo opposite translational vibrations. Namely, the rigid interconnection by the cylindrical tube (40) between the upper and lower suspension plates (36, 38), along with the support by four webs (48, 48') on a vertical plane along the rotation axis, would have absolutely prevented pivoting of either one of the plates about a pivot axis lying in the plane of that plate.

There would have been no suggestion by the reference toward significant modifications to achieve the present inventive arrangement.

15) Regarding present claim 11, the reference does not disclose or suggest first, second and third pairs of webs arranged as presently claimed. The present arrangement is not a mere duplication of the single pair of webs disclosed by the reference, because the plural pairs of webs in the inventive arrangement necessarily have different configurations, functions and purposes in terms of their flexible axes and the like, in order to achieve the translational vibration and pivoting vibration of the mounting plate according to the present

invention. That would not have been achieved by a "mere duplication" of the same webs disclosed by the reference, as has been discussed generally above.

16) Present claim 13 recites that the second and third pairs of webs have a <u>notch</u> therein positioned <u>so as to increase a flexibility of the respective web in a direction **perpendicular** to the plate plane</u>. That would have been expressly and directly contrary to the teachings of Bandhopadhyay et al regarding the flexible axis and the strong axis of the webs in the arrangement of the reference (see e.g. col. 4, lines 35 to 38). Thus, such a notch is <u>not a mere design consideration</u> within the level of ordinary skill in the art, but instead is <u>directly contrary to the teachings of the prior art</u> as represented by Bandhopadhyay et al.

17) Regarding present claim 14, the reference has absolutely nothing to do with several pairs of webs with different characteristics as presently claimed. The reference would have provided no suggestions regarding such several pairs of webs with different features, configurations, and arrangements, because it would have been directly contrary to the express teachings of the reference, and would have provided no purpose or function in the arrangement disclosed by the reference (see e.g col. 4, lines 35 to 38).

18) Present claim 15 recites that the webs include a first pair of webs extending along and parallel to the pivot axis, and second and third pairs of webs extending perpendicularly to the pivot axis. This relates to the embodiment of present Fig. 5, and has

absolutely no relation or similarity to the disclosures of the reference whatsoever. The reference does not suggest any webs that are perpendicular to the orientation of other webs. In fact, such an orientation would have been directly contrary to the requirements of the reference (see e.g. col. 4, lines 35 to 38).

19) Regarding claim 16, the change from the circular shape according to the reference, to the rectangular plan shape according to the present claim is not a mere design consideration, when taken in connection with the special arrangement of webs in relation to the rectangular plan shape of the mounting plate. The reference would not have provided any suggestions toward such an arrangement of plural pairs of webs with respect to a rectangular plan shape of a mounting plate.

20) Regarding claim 19, the Examiner is correct that the reference does not disclose a configuration with the rotation axis oriented horizontally and the plate plane oriented vertically. The Examiner's argument in this regard has not shown that it would even have been possible to simply tip over the apparatus according to Bandhopadhyay et al. and still be functional. The reference expressly describes the disclosed apparatus as a vertical balancing machine in the Title, the Abstract, the Field of the Invention, the Background of the Invention, the Summary of the Invention, the Detailed Description, and the Claims. With only one pair of webs supporting each suspension plate, it is considered that there would have been inadequate support for

simply tipping the disclosed apparatus into a horizontal rather than vertical orientation. Also, it would have had to have been considered whether the four webs should then be on a horizontal plane (i.e. webs to the sides) or a vertical plane (i.e. webs up and down) with the machine tipped sideways. The forces and functions would have been substantially different. There are no suggestions by the reference how this would be carried out.

21) Regarding present claim 25, see the corresponding discussion relating to claim 7 above.

22) Now moving on to the next **independent** claim, present **independent claim 26** is directed to a method of determining an unbalance of a rotational body. The method includes a step of <u>separately detecting a first vibration among a pivotal vibration and a translational vibration separately from the second other vibration, using a first sensor that is sensitive to only the first one of the vibrations without being sensitive to the second other one of the vibrations</u>.

As pointed out above, Bandhopadhyay et al. arrange the two vibration transducers <u>in a manner that is mechanically and functionally the **same** for both transducers</u> (see e.g. col. 3, lines 17 to 24). Thus, in any method of using the apparatus according to Bandhopadhyay et al., the two vibration transducers will necessarily <u>**both** sense the **same** vibrations or vibration components, and they will **each** be sensitive to **all** vibration components being picked-up</u>. There is no suggestion and no enabling disclosure of how one could separately detect a first

vibration among a pivotal vibration and a translational vibration, separately from the second other vibration, using a sensor that is sensitive to only the first vibration without being sensitive to the second vibration.

According to the invention, it is the special mechanical arrangement and support of the mounting plate that achieves the separation of the vibration components, and the arrangement of the vibration sensors that ensures that each sensor is sensitive to only one of the vibration components without being sensitive to the other vibration component. These features are directly contrary to the teachings of the reference, that both vibration transducers shall be arranged in the same manner and be functionally the same.

As discussed above, if at all, it would only be possible with the Bandhopadhyay et al. apparatus, to detect pivotal vibrations by calculating such pivotal vibrations from the <u>mixed</u> signals of <u>both</u> vibration transducers. That would not have suggested the present method involving separately detecting a first vibration component.

23) Present **independent claim 27** is directed to an apparatus including <u>first, second and third pairs of webs</u> that are connected to a mounting plate and an outer frame so as to support the mounting plate in a particular manner relative to the frame. A <u>first pair of webs extends along and parallel to the pivot axis</u> of the mounting plate, and the <u>second and third pairs of webs extend parallel to each other and parallel to the first pair of webs in the plate plane on opposite sides of the pivot axis</u>. In

view of the above discussed disclosure of the reference, it is clear that Bandhopadhyay et al. neither disclose nor suggest the provision of three pairs of webs as presently claimed. This is <u>not a mere duplication</u> of the single pair of webs disclosed by Bandhopadhyay et al. on each one of the suspension plates, <u>because the present pairs of webs necessarily have different functions</u> as discussed above and in the present written description (see e.g. page 13, line 12 to page 15, line 14). The mere redundant duplication of the webs disclosed by Bandhopadhyay et al. would have rendered the disclosed device non-functional, and would not have achieved any discernible purpose or advantage. Such purposes and advantages have been disclosed for the first time in the present application, in connection with additional distinct features of the additional pairs of webs.

24) Present **independent claim 28** is directed to an apparatus including <u>a first pair of webs and further webs</u> connecting a mounting plate to an outer frame. The <u>further webs are expressly defined as flexible with respect to bending **perpendicular** to the plate plane</u>.

That is directly contrary to the requirements of the webs disclosed by Bandhopadhyay et al. (see col. 4, lines 35 to 38), and would have served no discernible purpose in the apparatus according to Bandhopadhyay et al. On the other hand, in the present invention, this feature for the first time provides a new function that is different from the first pair of webs.

The additional features of present dependent claims 29 to 31 would also not have been suggested by the reference, because

the reference does not suggest providing further webs in the first place. Especially according to present claim 30, which relates to the embodiment of present Fig. 5, the further webs extend perpendicularly relative to the webs of the first pair. The reference would not have suggested any such perpendicular webs. Referring to present claim 31, the reference also would not have suggested further webs arranged symmetrically on opposite sides of the pivot axis, because the reference does not even define a pivot axis.

25) For the above reasons, the present invention would not have been obvious from the disclosures of the Bandhopadhyay et al. reference, and the Examiner is respectfully requested to withdraw the rejection of claims 1 to 5 and 7 to 26 (apparently also applying to claims 27 to 31) as obvious under 35 U.S.C. §103.

26) Referring to section 5 on page 8 of the Office Action, the indication of allowable subject matter in prior claim 6 is appreciated. Claim 6 has been maintained without amendment and should still be seen as containing allowable subject matter. Furthermore, new independent claim 41 is based on a combination of prior claims 1, 2, 3 and 6, and should thus now be allowable.

27) New claims 31 to 39 depend from apparatus claim 1, and new claim 40 depends from method claim 26. These claims each recite additional features of the invention that are expressly and clearly distinguishable from or even the opposite of the features disclosed by Bandhopadhyay et al. The Examiner is respectfully

requested to compare each of these dependent claims to the prior art.

For example, claim 32 recites that there is only one single mounting plate, whereas Bandhopadhyay et al. necessarily require two suspension plates.

Claims 33 and 34 respectively relate to embodiments with all of the webs parallel to each other or with one pair of webs perpendicular to another pair of webs, neither of which would have been suggested by the reference.

Claim 35 recites a sensor with its sensitive measuring axis lying in the plane of all webs. Contrary thereto, in the arrangement of Bandhopadhyay et al., the plane of all of the webs extends vertically along the rotation axis, while all of the vibration transducers are oriented with their sensitive axes perpendicular to the plane of the webs.

Claim 36 recites a second sensor having its sensitive axis oriented perpendicular to the plane of the plate. That is contrary to the arrangement disclosed by Bandhopadhyay et al., in which the transducers are oriented with their sensitive axes lying in the respective planes of the plates.

Claim 37 recites that there are two transducers connected directly to the same mounting plate and directly to the same outer frame, which is not suggested by the reference.

Claim 38 recites that there are two vibration transducers with their sensitive measuring axes oriented perpendicular to each other, which is not suggested by the reference, and would have had no functional purpose in the arrangement of the reference.

Claim 39 makes clear that the first sensor detects purely the in-plane translational vibrations, while the second sensor detects purely the pivoting vibrations, which is directly contrary to the teachings of the reference, whereby both sensors are functionally the same, and both sensors each measure a mixture of all vibrations that are to be measured.

Dependent method claim 40 recites the additional step of further separately detecting the second one of the vibrations. The reference would not have suggested such separate detection of two separate vibration components.

For these reasons, it is respectfully submitted that the new claims each define patentable subject matter.

28) Favorable reconsideration and allowance of the application, including all present claims 1 to 41, are respectfully requested.

Respectfully submitted,

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